

MATERIAL SAFETY DATA SHEET

SRM Supplier: National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Mail Stop 2321
Gaithersburg, Maryland 20899

SRM Number: 1932
MSDS Number: 1932
SRM Name: Fluorescein Solution
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SECTION I. MATERIAL IDENTIFICATION

Material Name: Fluorescein

Description: Each unit of SRM 1932 consists of three sealed amber glass ampoules containing a solution that consists of fluorescein in an aqueous borate buffer. Approximately 2.0 mL of the solution is flame-sealed into each individual ampoule that has been pre-scored for easy opening.

Other Designations: Fluorescein (o-(6-hydroxy-3-oxo-3h-xanthen-9-yl)-benzoic acid; dihydroxyfluorane; 3'6'-fluorandiol; fluoresceine; resorcinolphthalein; diresorcinolphthalein; tetraoxy-phthalophenoneanhydroxide; soap yellow F; C.I. yellow)

Name
Fluorescein

Chemical Formula
 $C_{20}H_{12}O_5$

CAS Registry Number
2321-07-5

DOT Classification: Not Hazardous by DOT Regulations

Manufacturer/Supplier: Available from a number of suppliers

SECTION II. HAZARDOUS INGREDIENTS

Hazardous Component	Nominal Concentration	Exposure Limits and Toxicity Data
Fluorescein	61 $\mu\text{mol/kg}$ (2 % mass fraction)	No occupational exposure limits established
		Human, Intravenous: TD_{LO} : 7143 nL/kg
		Rat, Intraperitoneal: LD_{LO} : 600 mg/kg
		Mouse, Intravenous: LC_{LO} : 300 mg/kg

SECTION III. PHYSICAL/CHEMICAL CHARACTERISTICS

Fluorescein
Appearance: solid orange to red crystalline powder
Relative Molecular Mass: 332.311
Density: not available
Vapor Pressure: not applicable
Solubility in Water: insoluble
Solvent Solubility: soluble in alcohol, acetic acid, ether, dilute alkali

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Applicable **Method Used:** Not Applicable **Autoignition Temperature:** Not Applicable

Flammability Limits in Air (Volume %): **UPPER:** Not Applicable
LOWER: Not Applicable

Unusual Fire and Explosion Hazards: This material is a slight fire hazard. Dust/air mixtures may ignite or explode.

Hazardous Combustion Products: Thermal oxidative decomposition of fluorescein may produce miscellaneous decomposition products.

SECTION V. REACTIVITY DATA

Stability: X Stable Unstable

Conditions to Avoid: Avoid heat, sparks, flames, and other sources of ignition; avoid contact with incompatible materials.

Incompatibility (Materials to Avoid): Fluorescein is incompatible with oxidizing materials.

Hazardous Polymerization: Will Occur X Will Not Occur

SECTION VI. HEALTH HAZARD DATA

Route of Entry: X Inhalation X Skin X Ingestion

Health Hazards (Acute and Chronic): Inhalation of fluorescein may be irritating to the respiratory tract and mucous membranes. It may also produce an allergic respiratory reaction. Eye and skin contact may be irritating. Skin contact may produce allergic reactions and dermatitis. Halogen derivatives of fluorescein used in lipsticks have been known to cause photosensitization. Ingestion may cause irritation of the gastrointestinal tract.

Medical Conditions Generally Aggravated by Exposure: Not available.

Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens	<u> </u>	<u> X </u>
In the International Agency for Research on Cancer (IARC) Monographs	<u> </u>	<u> X </u>
By the Occupational Safety and Health Administration (OSHA)	<u> </u>	<u> X </u>

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact: Remove contaminated shoes and clothing. Rinse affected area with large amounts of water followed by washing the area with soap and water. Watch for chemical irritations and treat them accordingly. Obtain medical assistance if necessary.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Obtain medical assistance if necessary.

Inhalation: If inhaled, move the victim to fresh air. If breathing is difficult, give oxygen; if the victim is not breathing, give artificial respiration. Obtain medical assistance if necessary.

Ingestion: If ingestion occurs, wash out mouth with water. **DO NOT** induce vomiting. Obtain medical assistance if necessary.

TARGET ORGAN(S) OF ATTACK: Not available

SECTION VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released: Personnel should be protected against contact with this material.

Waste Disposal: Follow all federal, state, and local laws governing disposal.

Handling and Storage: Protect against direct contact with this material. An eye wash station and washing facilities should be readily available near handling and use areas.

SECTION VIII. SOURCE DATA/OTHER COMMENTS

Sources: MDL Information Systems, Inc., MSDS *Fluorescein*, 30 June 1997.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data on the MSDS. The certified value for this material is given on the NIST Certificate of Analysis.